

CLAIMS

Clean version of each replacement claim.

Applicant: Focke et al
Application No.:
Filing Date:
Title: Method and Apparatus
For the testing of in
Particular Cigarette Packs

Customer No.: 022870
Docket No.: 20605.006US
Art Unit:
Examiner:

1. Method for the testing of packs (10) of formable packaging material, in particular of cuboid-shaped packs (10) having at least one wrapper of cardboard, characterized in that the pack (10) is impinged with a defined pressure and the resulting deformations of the pack (10) are measured.

3. Method according to Claim 1, characterized in that the resistance of the pack (10) as counterforce, which varies as the result of the increasing deformation of the pack (10) under uniform movement of a pressure-exerting means, is measured.

5. Method according to Claim 3, characterized in that the course of force acting on the pack (10) during uniform movement of the pressure-exerting means is represented as a derivative.

6. Method according to Claim 1, characterized in that force is transferred to the pack surface (10).

7. Method according to Claim 1, characterized in that the pressure-exerting means is applied to the pack (10) with a uniform movement and that the force acting in the region of the pack (10) is measured by a pressure gauge.

9. Method according to Claim 8, characterized in that the measuring results of the load cell (28) and those of the position sensor (31) are evaluated by a computer and plotted as a curve, preferably in the form of its second derivative.

10. Apparatus for the testing of packs (10) of formable packaging material, in particular of cuboid-shaped packs (10) having at least one wrapper of cardboard,

characterized in that the pack (10) is positioned between opposing pressure-exerting means, in particular between a pressure plate (26) and a bearing plate (27), it being possible to move at least one pressure-exerting means, preferably the pressure plate (26), against the pack (10).

12. Apparatus according to Claim 11, characterized in that the bearing plate (27) is connected to the load cell (28).

14. Apparatus according to Claim 10, characterized in that attached to the displaceable pressure-exerting means is a distance-measuring device.

15. Apparatus according to Claim 10, characterized in that a test station (39) with an apparatus for the compressed deformation of a pack (10) is assigned to a packaging unit (42).

18. Method according to Claim 1, characterized in that the cuboid-shaped pack is a cigarette pack having at least one wrapper of thin cardboard.

19. Method according to Claim 3, characterized in that the resistance is displayed or plotted in graphic form.

20. Method according to Claim 5, characterized in that the derivative is a second derivative.

21. Method according to Claim 6, characterized in that the force is transferred across the entire pack surface.

22. Method according to Claim 6, characterized in that the force is transferred on the entire large-surface front side (13) of the cuboid-shaped pack.

23. Method according to Claim 6, characterized in that the force is transferred on the entire large-surface rear side (14) of the cuboid-shaped pack.

24. Method according to Claim 7, characterized in that the pressure gauge is a load cell (28).

25. Method according to Claim 9, characterized in that the curve is the second derivative.

26. Apparatus according to Claim 10, characterized in that the cuboid-shaped pack is a cigarette pack having at least one wrapper of thin cardboard.

27. Apparatus according to Claim 10, characterized in that the at least one pressure exerting means is the pressure plate (26).

28. Apparatus according to Claim 10, characterized in that the bearing plate (27) is connected to the load cell (28).

29. Apparatus according to Claim 14, characterized in that the distance-measuring device is a position sensor (31) attached to the displaceable pressure strut (24).